

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A4-166PCT	FOR FURTHER ACTION	See Form PCT/PEA416
International application No. PCT/US2004/031155	International filing date (day/month/year) 23.09.2004	Priority date (day/month/year) 30.09.2003
International Patent Classification (IPC) or national classification and IPC H01R13/24, H01R12/22		
Applicant MOLEX INCORPORATED et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 24.03.2005	Date of completion of this report 15.12.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Salojärvi, K Telephone No. +31 70 340-4036	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/031155

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-5 as originally filed

Claims, Numbers

1-5 received on 18.10.2005 with letter of 14.10.2005

Drawings, Sheets

1/5-5/5 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☒ the claims, Nos. 6-13
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/031155

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-5
Inventive step (IS)	Yes: Claims	
	No: Claims	1-5
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1 Reference is made to the following documents:

D1: DE 100 27 600 C
D2: US-B1-6 302 703
D3: US-B1-6 315 576
D4: US-A-6 077 089

2 INDEPENDENT CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

2.1 The document D1 discloses (the references in parentheses applying to this document):

An electrical connector for interconnecting a pair of spaced conductors (by the contact points), comprising:

- a dielectric housing including a top wall (56) having a top opening (54), a bottom wall (68) having a bottom opening (66) generally aligned vertically with the top opening, a separator wall (see Fig. 3) between the top and bottom walls and combining therewith to define top and bottom cavities (see Fig. 3) above and below the separator wall, each of the cavities being bounded on opposite sides thereof by a pair of spaced side walls (e.g. ref. n:o 60 in Fig. 3), the separator wall connecting the pair of spaced side walls; and
- a one-piece conductive terminal (10) including a generally U-shaped body portion (see Fig. 1A) defined by a pair of mounting arms joined at proximal ends thereof by a cross portion, the U-shaped body portion embracing said separator wall (see Fig. 2, Fig. 3) with the mounting arms located on

opposite sides of the separator wall in the top and bottom cavities, a pair of resilient contact arms extending from the distal ends of the mounting arms into the top and bottom cavities, the contact arms having contact portions (16, 36) projecting through the openings in the top and bottom walls for engaging said spaced conductors, opposing guide slots (60) in the side walls for receiving side edges of the respective mounting arm (see Fig. 1A) of the terminal where the side edges of the mounting arms include fixing sections (32) for fixing the mounting arms in said guide slots, and the cross portion (28; Fig. 1A) of said U-shaped body portion of the terminal is enlarged.

It is to be noted that it is at least implicitly present in D1 that this enlarged portion may form a manual gripping knob of the terminal for facilitating inserting the terminal into said cavities on opposite sides of said separator wall.

2.2 The requirements of Article 33(2) PCT are thus not fulfilled.

3 DEPENDENT CLAIMS 2-5

Dependent claims 2-5 do not appear to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1-D4 and the corresponding passages cited in the search report.

4 INDUSTRIAL APPLICABILITY

The invention relates to an electrical connector. Thus it is obvious that the invention has industrial applicability.

CLAIMS

1. An electrical connector (10) for interconnecting a pair of spaced conductors (12), comprising:

a dielectric housing (16) including a top wall (20) having a top opening (22), a bottom wall (24) having a bottom opening (26) generally aligned vertically with the top opening, a separator wall (28) between the top and bottom walls and combining therewith to define top and bottom cavities (32,34) above and below the separator wall, each of the cavities being bounded on opposite sides thereof by a pair of spaced side walls (30), the separator wall (28) connecting the pair of spaced side walls; and

a one-piece conductive terminal (18) including a generally U-shaped body portion (40) defined by a pair of mounting arms (42) joined at proximal ends thereof by a cross portion (44), the U-shaped body portion embracing said separator wall with the mounting arms located on opposite sides of the separator wall in the top and bottom cavities, a pair of resilient contact arms (48) extending from the distal ends of the mounting arms into the top and bottom cavities, the contact arms having contact portions (50) projecting through the openings in the top and bottom walls for engaging said spaced conductors, opposing guide slots (38) in the side walls (30) for receiving side edges of the respective mounting arm (42) of the terminal (18) where the side edges of the mounting arms (42) include fixing sections (58) for fixing the mounting arms in said guide slots (38), and the cross portion (44) of said U-shaped body portion (40) of the terminal (18) is enlarged to form a manual gripping knob of the terminal for facilitating inserting the terminal into said cavities (32,34) on opposite sides of said separator wall (28).

2. The electrical connector of claim 1 wherein said one-piece conductive terminal (18) is stamped and formed of sheet metal material.

3. The electrical connector of claim 1 wherein said one-piece terminal (18) is symmetrical on opposite sides of said separator wall (28).

4. The electrical connector of claim 1 wherein said contact arms (48) include stopping portions (56) engageable with inside surfaces of the top and bottom walls (20,24) of the housing (16) adjacent said openings (22,26) to limit the extent that the contact portions (50) can project through said openings.

5. The electrical connector of claim 6 wherein said contact arms (48) are assembled into the cavities (32,34) with a spring pre-load, with said stopping portions (56) maintained in engagement with the inside surfaces of the top and bottom walls (20,24).